New Species of *Moraea* (Iridaceae–Iridoideae) from Southern Africa

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ABSTRACT. *Moraea melanops*, *M. deltoidea*, *M. vespertina*, and *M. vigilans* are new species of the southern African genus *Moraea* (ca. 195 species), of subfamily Iridoideae of the Iridaceae. *Moraea vespertina* belongs to subgenus *Visciramosa*, now comprising six species. It has the characteristic branched stems, viscous secretion on the nodes and internodes, and free, connivent anthers of the subgenus, but is distinctive in its white flowers that open for a few hours in the late afternoon, and basal fan of four to six, firm-textured leaves. *Moraea deltoidea*, from the Klein River Mountains in Western Cape Province, and *M. vigilans*, from the northern high Drakensberg of Free State and KwaZulu-Natal, belong in subgenus *Vieusseuxia* and are allied to the *M. unguiculata* complex of the subgenus. *Moraea deltoidea* has vestigial style branches and inner tepals that are more or less entire to obscurely three-lobed. *Moraea melanops* is the eighth species of section *Galaxia* series *Eurystigma*, one of two series of the exclusively western southern African section of 16 species distributed from the Bredasdorp District of Western Cape Province to northern Namaqualand in Northern Cape Province. Vegetatively resembling other Western Cape species, including *M. barnardiella* and *M. versicolor*, *M. melanops* can be distinguished by its purple to lilac perianth with a dark purple-black center, and stamens partly to entirely free; like *M. barnardiella* it has laxly spreading tepals that do not form a floral cup.

Moraea, with some 195 species (Goldblatt, 1998), is the largest African genus of tribe Irideae of Iridoideae, one of four subfamilies of the Iridaceae as currently recognized. The genus is defined by bifacial, channeled to flat leaves and a unique type of cormous rootstock consisting of a single enlarged internode that is derived entirely from an axillary bud. The genus is currently divided into five subgenera (Goldblatt, 1986). Subgenus *Visciramosa*, to which the new *M. vespertina* belongs, is restricted to the southern African winter-rainfall zone and now includes six species. Two more new species belong in the southern African and largely winter-rainfall subgenus *Vieusseuxia* and appear to be allied to a complex of species, the most widespread and common of which is the small-flowered *M. unguiculata* Ker Gawler. *Moraea deltoidea*, which has vestigial style crests and undivided, lanceolate inner tepals, is restricted to the mountains around Hermanus on the southern coast of Western Cape Province. *Moraea vigilans* occurs in the high Drakensberg of Free State and KwaZulu-Natal Provinces of South Africa and northeastern Lesotho. Also restricted to the southern African winter-rainfall zone is *Moraea melanops* of section *Galaxia*, which now includes 16 species, evenly shared among two series. The new *M. melanops* belongs to series *Eurystigma*, most species of which, like *M. melanops*, have broadly lanceolate to ovate leaves and flowers in shades of pink to lilac.

1. Moraea vespertina Goldblatt & J. C. Manning, sp. nov. TYPE: South Africa. Northern Cape Province: Calvinia District, rocky hills E of Nieuwoudtville, 31 Oct. 1996, *Goldblatt & Manning 10580* (holotype, NBG; isotypes, K, MO, PRE). Figure 1A.

Plantae 70–100 cm altae, cormo globoso 15–25 mm diametro tunicis reticulatis fibrosis brunneis obtecto, foliis usitate 4–6 linearibus 5–8 mm latis, caule perramoso, spatha interne inflorescentis 40–45 mm longis, floribus albis flavis notatis, tepalorum oblongorum unguiculatorum limbis reflexis, externorum unguibus arcuatis ca. 11 mm longis, limbis 30–35 × ca. 15 mm, internorum limbis ca. 30 × ca. 9 mm, filamentis 7–8 mm longis inferne in columnam gracilem conniventibus superne per 1.5 mm divergentibus, antheris albis ca. 6 mm longis, styli ramis ca. 8 mm longis cristis anguste linearibus erectis ca. 15 mm longis ornatis, ovario exserto anguste clavato truncatis ca. 10 mm longo, capsulis ovoideis, 18–25 mm longis.

Plants 70–100 cm high. *Corm* globose, 15–25

Figure 1. —A. *Moraea vespertina* (*Goldblatt & Manning 10580*). —B. *Moraea deltoidea* (*Hanekom s.n.*). Scale bar 1 cm. Drawn by J. C. Manning.

mm diam., the tunics of coarse, red-brown fibers connected in herringbone fashion by fine cross fibers. *Cataphylls* papery, uppermost reaching shortly above the ground, becoming dry and dark brown by flowering time, then often irregularly broken. *Foliage leaves* usually four to six, the lower three to five basal, distichous, the blades channeled, arching outward, mostly 5–8 mm wide, the uppermost cauline and shorter than the basal. *Stem* erect, the main axis lightly flexuose, viscous below the nodes for half the length of an internode, bearing an entirely sheathing bract-like leaf at each of the upper nodes, these 4–6.5 mm long, green below, dry and light brown above, the apices attenuate and dry, bearing one or rarely two lateral branches at each of the upper three or four nodes, those at the lower nodes sometimes two internodes long and also branched, the branches erect and parallel to the stem below, flexed outward above the sheathing leaf. *Inflorescence* a rhipidium, terminal on the branches, several-flowered; *spathes* unequal, dull green, becoming somewhat purplish with age, the margins dry and membranous, with dry, brown attenuate apices, the outer 20–25 mm long, the inner 40–45 mm long. *Flowers* white, almost translucent, the outer tepals each with a yellow nectar guide streaked with darker veins at the limb base, lightly lemon-scented, the tepal claws arching upward and forming a cup enclosing the filaments and anther bases; *tepals* clawed, the outer larger than the inner, the claws arcuate, erect above, 10–11 mm long, claws of the outer tepals reaching to about the middle of the anthers and with a large basal green nectary, the limbs lanceolate, narrowly acute to attenuate, spreading horizontally or dipping up to 45° below the horizontal, the outer 30–35 × ca. 15 mm, the inner 28–30 × 8–9 mm. *Filaments* 7–8 mm long, free but connivent below and forming a slender column, diverging in the upper 1.5 mm; *anthers* ca. 6 mm long, oblong but wider below and with the connective evident on the abaxial side, appressed to the style branches, white, the pollen white. *Ovary* exserted, narrowly club-shaped, ca. 10 mm long; *style* dividing at the apex of the filament column, the branches ca. 8 × 8 mm, ascending, the stigmatic flap bilobed with a sterile acute central appendage, the crests linear, erect, ca. 15 mm long. *Capsules* narrowly ovoid to oblong, 18–25 mm long, suberect to nearly horizontal; *seeds* angular, the angles ± ridged to winged, ca. 4–5 × 3 mm, dark brown.

Flowering October and early November; flowers open at 4:00–4:30 P.M. and wilt at 7:30–8:00 P.M.

Etymology. From the Latin *vespertina*, "early evening," referring to flower phenology, opening in the late afternoon and lasting until shortly after nightfall.

Distribution and biology. *Moraea vespertina* is endemic to the Bokkeveld Escarpment near Nieuwoudtville in the Calvinia District of Northern Cape Province, South Africa. It occurs in a very specialized habitat and is currently known only from two relatively small populations a short distance east and northeast of the town of Nieuwoudtville. Plants grow in heavy red doleritic clay soil in low outcrops of dolerite. Drainage is poor and the ground remains waterlogged for most of the growing season, sometimes even into flowering time in early November. This peculiar habitat is home to a characteristic suite of species, including *Berkheya glabrata* (Thunberg) Fourcade (Asteraceae), *Sparaxis pillansii* L. Bolus (Iridaceae), and *Zantedeschia odorata* P. Perry (Araceae), which are rare elsewhere, and *Cyanella aquatica* G. Scott (Tecophilaeaceae), which occurs nowhere else.

Relationships. The sixth member of the taxonomically isolated subgenus *Visciramosa* (Goldblatt, 1976, 1986), *Moraea vespertina* has the typical attributes of the subgenus, including sticky internodes, multiple leaves, branched stems, relatively short inflorescence spathes, and free, connivent filaments. It is distinctive in having four to six foliage leaves, whereas other species of the subgenus rarely have more than two, and a large white, lightly scented flower that opens in the late afternoon. The flowers are fairly typical of the genus in having larger outer tepals with a spreading limb bearing a nectar guide at the base, smaller, unmarked inner tepals, and broad style crests with prominent, erect crests. The only other white-flowered species of the subgenus, *M. viscaria* (L.f.) Ker Gawler, is a smaller plant that has small, strongly scented flowers that open in the middle of the afternoon. At present, we cannot suggest any species within subgenus *Visciramosa* as being obviously allied to *M. vespertina*. The presence of multiple leaves is often a plesiomorphic character, and on this basis *M. vespertina* might be regarded as the least derived species in the subgenus. Other species have two, or rarely three, leaves, and favor well-drained habitats, usually in sandy soil.

2. Moraea deltoidea Goldblatt & J. C. Manning, sp. nov. TYPE: South Africa. Western Cape: Klein River Mountains, Vogelgat Nature Reserve, near Mainstream, 23 Nov. 1996, *Hanekom s.n.* (holotype, NBG; isotypes, MO, PRE). Figure 1B.

Plantae 30–40 cm altae, cormo globoso 8–14 mm diametro, folio solitario producto lineari canaliculato 1.5–2 mm lato, caule ramoso flexuoso, spatha interna inflorescentis 45–50 mm longa externa longitudine circa dimidio inclusa constante, floribus cremeo-flavis tepalis externis atropunctatis 19–21 mm longis, internis oblanceolatis ca. 14 × 4 mm, filamentis 5–6.5 mm longis in columnam 4–5 mm longo connatis, antheris 4–6 mm longis luteis, styli ramis 5–6 mm longis cristis deltoideis fere 1 mm longis ornatis, capsulis clavato-ellipsoideis 8–10 mm longis.

Plants 30–40 cm high. *Corm* globose, 8–14 mm diam., with tunics of light brown, finely textured fibers. *Cataphyll* usually dry and brown at flowering, usually irregularly torn into fibrous strips. *Foliage leaf* solitary, linear, channeled, exceeding the stem, usually bent and trailing above, 1.5–2 mm wide. *Stem* erect below, usually curving outward below the nodes, usually 3 internodes long, branching at each node or only at the uppermost, with up to 3 branches per node, the branches sometimes also branched, with sheathing, bract-like leaves 35–45 mm long at the nodes. *Inflorescence* a rhipidium, terminal, several-flowered; *spathes* unequal, attenuate, green below, dry and membranous toward the apices, the inner 45–50 mm long, the outer about half as long. *Flowers* pale creamy yellow, the outer tepals with dark speckles at the base of the limb and on the claw, the claws spreading at ca. 60° from the vertical, forming a wide cup including the stamens and style branches, the limbs lightly reflexed; *outer tepals* broadly obovate, 19–21 mm long, the limb 10–12 × 8–9 mm; *inner tepals* oblanceolate, ca. 14 × 4 mm. *Filaments* united in the lower two thirds in a slender column, 4–5 mm long, free and diverging in the upper 1–1.5 mm; *anthers* 4–6 mm long, widely diverging, cream, the pollen orange, slightly exceeding the stigmatic lobes and occasionally just exceeding the crests. *Ovary* included or partly exserted, ca. 4 mm long; *style branches* slightly wider than the anthers, 5–6 mm long, *crests* broadly deltoid, slightly less than 1 mm long. *Capsules* club-shaped to ellipsoid, 8–10 mm long, well exserted; *seeds* narrowly prismatic, ca. 2 × 1 mm.

Flowering October and November.

Etymology. From the Latin *deltoideus*, "broadly triangular or D-shaped," referring to the shape of the reduced, very short style crests.

Distribution and biology. Moraea deltoidea is restricted to the southern coast of Western Cape Province between Kleinmond and the Klein River Mountains, near Hermanus. Most of the collections are from the immediate vicinity of Hermanus, either in Fernkloof Nature Reserve or Vogelgat, but we suspect the species has a wider range in these mountains, which extend eastward to Stanford and Akkediskloof.

The few specimens of *Moraea deltoidea* collected in the past were included in the widespread, and fairly variable, *M. unguiculata* Ker Gawler, which occurs almost throughout the southern African winter-rainfall zone (Goldblatt, 1986). The two have the same general aspect and vegetative appearance, including the solitary, narrow leaf, branched stem, and fairly slender habit. The differences between the two are restricted to the flowers. *Moraea deltoidea* has oblanceolate inner tepals with a broad claw and a short, somewhat attenuate limb extending outward or reflexed to the same degree as the outer tepal limbs. In *M. unguiculata* the inner tepals consistently have a fairly narrow claw and trilobed limb consisting of two shorter, obtuse lateral lobes and a slender, tapering central lobe that coils inward (Goldblatt, 1986; Goldblatt & Manning, 1995). The style crests of *M. unguiculata* are usually well developed and lanceolate, thus longer than wide. In *M. deltoidea* the crests are deltoid, and wider than high. *Moraea unguiculata* is most frequently found on clay slopes, less often on dry sandstone soils, whereas *M. deltoidea* occurs exclusively on well-watered, south-facing rocky sandstone slopes. Available information from amateur naturalists indicates that it flowers only after wildfires.

Moraea deltoidea may also be confused with *M. tricuspidata* D. Delaroche, which typically has larger, white or cream flowers. The trilobed inner tepals of this species have short, fairly broad, obtuse outer lobes and a short, narrow central lobe that curves inward obliquely, but is not coiled as is typical of the central inner tepal lobe in *M. unguiculata*.

Paratypes. SOUTH AFRICA. **Western Cape:** 3419 (Caledon) Kleinmond (AC), 15 Oct. 1996, *Mostert 200* (NBG); Onrus Mountains, Glen Fruin, on burnt, peaty sandstone slope, Nov. 1991, *Barker 303* (K, MO, NBG, PRE); Vogelgat Nature Reserve (AD), 12 Nov. 1986, *Williams 3731* (NBG), 20 Oct. 1982, *Williams 3350* (NBG). Fernkloof Nature Reserve, Droekloof, 13 Nov. 1996, *Drewe 1016* (NBG); Fernkloof Nature Reserve, Gandoger's marsh, 23 Nov. 1996, *Drewe 1073* (MO, NBG).

3. Moraea vigilans Goldblatt & J. C. Manning, sp. nov. TYPE: South Africa. Free State: slopes of The Sentinel, 15 Feb. 1999, *Goldblatt & Manning 11046* (holotype, NBG; isotypes, K, MO, PRE). Figures 2, 3.

Plantae 50–70 cm altae, cormo globoso 8–15(–20) mm diametro tunicis fibrosis obtecto, folio producto solitario canaliculato lineari, caule ramoso flexuoso, inflorescentiae spatha externa 30–35 mm longa, interna 50–55 mm longa, floribus leviter odoratis, tepalorum externorum 24–28 mm longorum, ungue 7–9 mm longo, limbo obovato-rotundato albo leviter vel dense malvino-maculato, tepalis internis

Figure 2. Comparison of the flowers of *Moraea vigilans* (left) and *M. brevistyla* (right), photographed in the field.

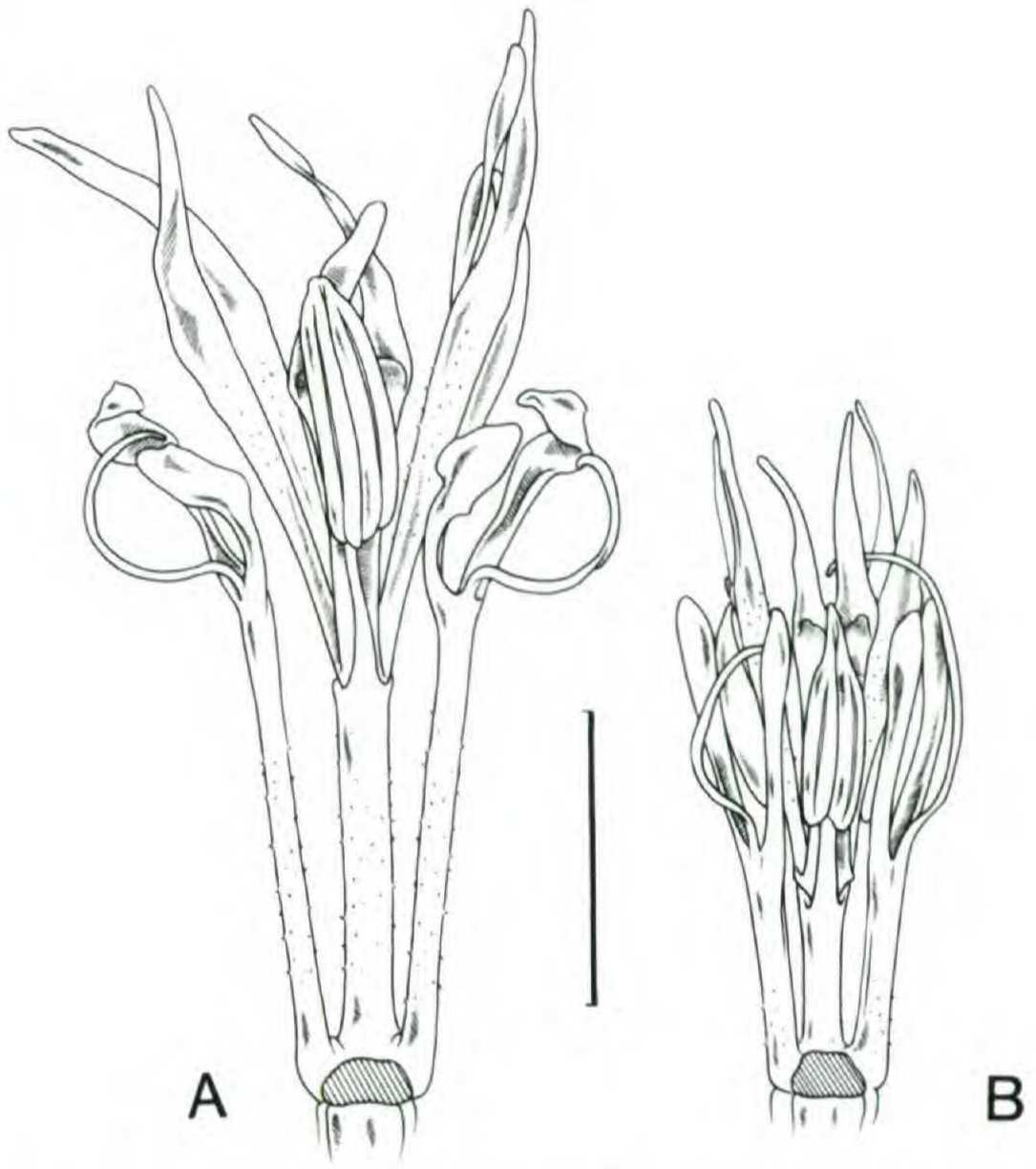

Figure 3. Inner tepals and stamen-style branch apparatus of *Moraea brevistyla* (A) and *M. vigilans* (B), (*Goldblatt & Manning 11046*). Scale bar 5 mm. Drawn by J. C. Manning.

tricuspidatis, brunneis 8.5–10 mm longis, filamentis in columnam 3 mm longa connatis apicem versus per 1–1.5 mm liberis, ramis styli ca. 4 mm longis cristis brunneis 3–4 mm longis ornatis.

Plants 50–70 cm high. Corm globose, 8–15(–20) mm diam. with fibrous tunics. *Foliage leaf* solitary, produced close to the ground, channeled and often about as long as the stem but usually bent and trailing above, linear, 3–4 mm wide. *Stem* 3 or 4 internodes long, usually branched at the 2 upper internodes, with up to 4 branches per node, each node bearing a sheathing, bract-like leaf 4.2–5 cm long, this green with a dry, brown, acute apex. *Rhipidia* terminal on the branches, flexed at the base, 3–4(–5)-flowered; *spathes* green, with dry, brown, acute(–attenuate) apices, the outer 30–35 mm long, the inner 50–55 mm long. *Flowers* usually white, often faintly tinged with mauve especially on the outside, the outer tepal limbs with bluish bands or spots toward the base and speckled with mauve over the lower third, sometimes over the lower two-thirds, rarely over the entire surface, the claws banded with mauve, the inner tepals brownish, speckled with cream, lightly sweet scented; *outer tepals* 24–28 mm long, evidently glabrous, the claw ascending, 7–9 mm long, with a small oblong nectary at the base, the nectary covered by a flap of tissue ca. 2 mm long, the limb orbicular to broadly ovate, held slightly above the horizontal, 18–20 × 14–17 mm; *inner tepals* 8.5–10 mm long, the claw ca. 3.5 mm long, erect, the limb tricuspidate, with outer lobes spathulate and erect, 5–6 mm long, inner lobe filiform, arching outward, mostly 4–6 mm long. *Filaments* united in a column ca. 3 mm long, diverging in the upper 1–1.5 mm; *anthers* appressed to the style branches, ca. 4 mm long, bluish, with acute apex, pollen yellow. *Ovary* oblong, 5–6 mm long; *style* dividing at the top of the filament column, the branches 4–5 mm long, reaching the apex of the outer tepal claws, the crests narrowly triangular, 3–4 mm long, brown. *Capsules* oblong, 12–15 × ca. 5 mm; *seeds* angular, ca. 1.2 mm long.

Flowering January to mid February.

Etymology. From the Latin *vigilans*, "vigilant, watchful," referring to the type locality, Sentinel Peak in the northern high Drakensberg Range.

Distribution and biology. *Moraea vigilans* is evidently a local endemic of the high Drakensberg presently known only from the slopes of The Sentinel, which lies close to the borders of KwaZulu-Natal and Free State Provinces of South Africa and the northeast corner of the landlocked kingdom of Lesotho. Plants are locally common on steep, moist

slopes in basalt outcrops where they grow in peaty loam. In this well-watered part of the Drakensberg, the ground remains moist throughout the growing season, November to March. We have no observations on the pollination of *M. vigilans* but assume that, like its relatives *M. brevistyla* (Goldblatt) Goldblatt and *M. trifida* R. C. Foster, it is pollinated by anthophrine bees in search of the small quantity of nectar held at the base of each outer tepal claw (Goldblatt et al., 1989, and unpublished data). It is puzzling, however, that while we have seen the large bee, *Amegilla capensis*, visiting *M. brevistyla* on three separate occasions and *M. trifida* once, no visits occurred to *M. vigilans*, although that bee was active when the plant was in bloom and it was growing within a few meters of the other two *Moraea* species.

Relationships. *Moraea vigilans* has the relatively small flower that lasts at least two days, and reduced, tricuspidate inner tepals characteristic of subgenus *Vieusseuxia* of the genus. Within the section it is evidently allied to other Drakensberg species of the subgenus, and is perhaps most closely related to the common and widespread Drakensberg species *M. brevistyla* (Goldblatt, 1986), with which it is easily confused. Herbarium specimens of the two species can only be distinguished by careful measurement of the floral parts, but when seen alive the difference in tepal orientation and coloring makes it immediately clear that these are separate species (Fig. 2). They actually grow within a few meters of one another on the slopes of The Sentinel: *M. brevistyla* grows on deeper soils on grassy slopes and *M. vigilans* is confined to basalt outcrops. Their flowering times overlap, and they can readily be compared with one another. It then becomes obvious that they are separate species. The most striking difference between the two is that the broadly ovate to orbicular outer tepal limbs of *M. vigilans* are spreading or held up to 30° above the plane defined by a right angle relative to the rhipidium-ovary axis. In contrast, the narrower, oblanceolate-obovate outer tepal limbs of *M. brevistyla* are weakly to strongly reflexed, and the limbs are usually pinched inward in the proximal third. Less apparent are the shorter outer tepal claws of *M. vigilans*, 7–9 mm long, and the shorter filament column and style branches, the latter reaching opposite the apex of the outer tepal limb. The short, brownish crests extend upward above the base of the tepal limbs for up to 4 mm. The outer tepal claws of *M. brevistyla* are 9–11 mm long, the filaments and anthers are longer than those of *M. vigilans* (12–15 mm combined length in *M. brevistyla* vs. ca. 8.5 mm in *M. vigilans*), and the style branches usually exceed the outer tepal limbs by up to 3.5 mm, while the white style crests extend upward a further 5 mm (Fig. 3). Although the two species appear virtually identical vegetatively, the stalks of *M. vigilans* are more willowy and tend to lean toward the ground, whereas the main stem and branches of *M. brevistyla* are often stiffly erect.

Figure 4. Flowering plants of *Moraea melanops* (*Goldblatt & Nänni 10249*). Scale bar 1 cm. Drawn by J. C. Manning.

Despite its being locally common and growing along a well-used hiking trail, *Moraea vigilans* appears to have been overlooked in the past. As far as we have been able to determine, the first collection of the species was made by the Denver horticulturist Panayoti Kelaidis in 1997. He drew our attention to the plant, and two years later we made the type collection.

Paratypes. SOUTH AFRICA. **Free State:** 2828 (Bethlehem) slopes of The Sentinel (DB), Jan. 1997, *Kelaidis s.n.* (MO).

4. Moraea melanops Goldblatt & J. C. Manning, sp. nov. TYPE: South Africa. Western Cape: Bredasdorp District, Fairfield Farm, 18 Aug. 1995, *Goldblatt & Nänni 10249* (holotype, NBG; isotypes, K, MO). Figure 4.

Plantae acaulescentes usque ad 4 cm altae, cormo glo-

boso 10–15 mm diametro, foliis obovatis usque oblanceolatis prostratis 20–35 × 10–14 mm marginibus undulatis, floribus in fasciculo laxo, spathis bracteisque foliaceis marginibus undulatis, floribus hypocrateriformibus purpureis in centro atropurpureis, tubo perianthii 18–27 mm longo cylindrico, tepalis patentibus vel leviter cupulatis obovatis ca. 16 × 9–10 mm, filamentis liberis vel infime connatis superne divergentibus, antheris ca. 3 mm longis, stylo erecto ca. 7 mm longo, antheris per ca. 1 mm superantibus, styli lobulis primo erectis cohaerentibus deinde supra antheras expansis.

Plants acaulescent, forming small tufts up to 4 cm high. *Corm* globose, asymmetric below, 10–15 mm diam., the tunics of cartilaginous layers, with age decaying into fibers arranged in herringbone pattern, or with hard vertical claw-like ribs separated by fine cross fibers, accumulating with age in a dense mass. *Cataphylls* membranous, persisting and accumulating with the remains of the past season's stems to form a fibrous neck around the underground part of the stem. *Leaves* not clearly distinguished from the floral bracts, only the lowermost inserted well below the ground shortly above the corm, this fairly short and inconspicuous, only two other leaves not associated with a flower, these inserted at ground level, the bases partly enclosing the inflorescence, the blades loosely prostrate, obovate to lanceolate, 20–35 × 10–14 mm, undulate, the margins occasionally crisped, especially on the proximal edges, leaves each subtending a flower, oblong or narrowly lanceolate, ± falcate and channeled, the margins usually crisped. *Inflorescence* a loose cluster of 2 to 5 flowers, each subtended by a leaf-like bract and a short sheathing bract; the floral bracts 22–24 mm long, pale and membranous in the lower half and the sheaths closed, broader above and green, obscurely bicarinate. *Flowers* hypocrateriform, light to dark purple, dark purple-black in the center; *perianth tube* cylindric, 18–27 mm long, ca. 1.8 mm wide, closed at the apex; *tepals* subequal, laxly spreading, obovate, ca. 16 × 9–10 mm. *Filaments* free or fused in the lower half, initially erect and contiguous, later diverging, ca. 3 mm long, yellow; *anthers* ca. 3 mm long, yellow, the pollen yellow. *Ovary* oblong-cylindric, ca. 4 mm long; *style* straight and erect, reaching ca. 1 mm beyond the anther apices, dividing into three short lobes, initially the lobes upright and appressed to one another, later becoming horizontal and lying just above the anthers. *Capsules* and *seeds* unknown.

Flowering mid August to early September.

Etymology. From the Greek *melanos*, "black" and *ops*, "eye," referring to the dark central pigmentation of the flower.

Distribution and biology. *Moraea melanops* is a rare endemic of the Caledon and Bredasdorp Districts of Western Cape Province, South Africa. The low-growing plants are inconspicuous and even in flower may be missed because of their close resemblance to co-blooming species of purple-flowered *Romulea rosea* (L.) Ecklon (Iridaceae), *Oxalis purpurea* L. (Oxalidaceae), and a species of *Drosera* (Droseraceae). It grows in heavy clay soil in renosterveld and flowers well only in disturbed sites where the vegetation has been burnt or heavily grazed so that the surrounding shrubby vegetation does not shade out the plants. The species may well be more common than is currently believed, but is so far known only from Fairfield Estate near Napier, Teslaarsdal, some distance west of Fairfield, and north of the Potberg, to the east. Plants of the latter collection are in fruit, so identification is provisional. Plants from the Teslaarsdal site, collected in 1976, were assigned to the related *M. barnardiella* Goldblatt (as *Galaxia barnardii* Goldblatt) by Goldblatt (1979). It seems reasonable to assume that *M. melanops* grows in similar habitats along the foot of the Klein River Mountain-Bredasdorp-Potberg axis. *Moraea barnardiella* is known only from Caledon and west and north of the town as far as Villiersdorp (Goldblatt, 1979, and later herbarium records).

The purple flowers with a dark center and spreading, rather than cupped, tepals recall particularly *Moraea barnardiella*, and it is to that species that *M. melanops* is most closely allied. Vegetatively, they appear to be identical and only the flowers differ. While *M. melanops* has free, slightly diverging filaments and the style exceeding the anthers and with fairly narrow lobes, *M. barnardiella* (Goldblatt, 1979) has the filaments free in the upper third and strongly diverging above, the style dividing opposite the middle of the anthers, and the style lobes themselves broader than in *M. melanops*.

Examination of living plants of this species has suggested to us an interpretation of the "inflorescence" in *Moraea* sect. *Galaxia*. Individual flowers are subtended by two foliar structures, a shorter inner and longer outer one, both with closed sheaths and inserted a short distance below the base of the ovary, i.e., at the base of a pedicel. The flower and these two foliar structures share a short stalk, a branch or peduncle (the distinction does not exist in subfamily Iridoideae). At the base of the branch/peduncle there is a scale-like membranous prophyll with two keels, exactly the organ one would expect at the base of a branch in the Iridaceae. This unit seems to us consistent with an interpretation that considers the flower and two associated foliar structures homologous with the branch and rhipidium, the inflorescence type of all

Iridoideae. The rhipidium is in this case single-flowered (a rhipidium is a type of monochasial cyme in which the inflorescence axis is collapsed, the flowers are thus borne in umbels, and the entire structure is laterally compressed and enclosed by opposed leaf-like bracts, the spathes). Single-flowered rhipidia are not common in the subfamily, but occur in depauperate plants in several genera, and are apomorphic in *Moraea cooperi* Baker (Goldblatt, 1986). The single flower on each of the branches of this species is subsessile and enclosed by opposed leathery spathes. The spathes are unequal, the inner one longer than the outer, and both are entirely sheathing. We suggest this is homologous with the pattern described for each flower in section *Galaxia*. In species of Iridoideae that have rhipidia with more than one flower, each additional flower is subtended by a membranous two-keeled bract. Thus we interpret the cluster of flowers borne at ground level in a basal rosette found in section *Galaxia* as a compound structure of two or more rhipidial inflorescences, each with a single flower, and arranged in umbellate fashion.

Paratypes. SOUTH AFRICA. **Western Cape:** 3419 (Caledon) 2 km E of Shaw's Pass on the road to Teslaarsdal (AD), 13 Sep. 1976, *Goldblatt 4093* (MO, NBG); 15 km NW of Napier, Fairfield Farm, poorly drained clay on gentle slope (BC), 27 July 1995, *Kemper IPC811* (NBG). 3420 (Bredasdorp) Potteberg North, recently burnt lower slopes (BC), 11 Oct. 1967 (fr), *Taylor 7198* (NBG).

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